

COMPOSITE HEALTH CARE SYSTEM II (CHCS II)



ASD(HA) ACAT IAM Program

Total Number of Systems:	110 Sites
Total Program Cost (TY\$):	\$1,357M
Average Unit Cost (TY\$):	\$12.3M
Initial Operating Capability:	3QFY00

Prime Contractor

Multiple Contractors: SAIC, CTA, IBA, Northrop Grumman, Iona, SRA, USI, Birch & Davis

SYSTEM DESCRIPTION & CONTRIBUTION TO JOINT VISION 2010

First introduced in 1989, the Composite Health Care System (CHCS) is a tri-Service, medical management automated information system now used in all DoD military treatment facilities (MTFs) worldwide to support hospital administration and clinical health care. CHCS II, which expands on and will eventually subsume the original CHCS, is the target automated information system for the clinical business area of DoD's Military Health System (MHS). It is an evolutionary program intended to unite functionalities of over 40 different DoD and Service-unique automated information systems in varying stages of development, and create computer-based patient records (CPRs) for all MHS beneficiaries. Nearly all of the new applications being integrated into CHCS II are commercial-off-the-shelf products. CHCS II supports the *Joint Vision 2010* concept of *focused logistics* by integrating all the clinical systems of the three Services into a single joint system, increasing access to information, taking advantage of advanced business practices, integrating the civilian health care sector, and allowing MTFs to be more efficient in protecting lives and resources.

BACKGROUND INFORMATION

OT&E has been conducted continuously on CHCS since its inception in 1989. When CHCS II was placed under OSD oversight in 1997, the original CHCS became a legacy system and was removed from oversight. Although a few stand-alone applications that will be integrated into CHCS II have undergone OT&E, CHCS II has yet to be tested as an integrated system. OT&E on two initial applications has been conducted under the auspices of a CHCS II TEMP approved by DOT&E in September 1997.

The first application to undergo OT&E in April 1998 was the Clinical Information System (CIS). CIS supports inpatient care by allowing health care providers to electronically view records of treatment and medication summaries, enter orders and treatment notes, and monitor vital signs of patients. It offers a foundation for CPRs, which is the ultimate objective of CHCS II. OPTEC, the independent OTA, found CIS to be operationally effective, suitable, and survivable, with the possible exception of Y2K compliance. An independent DOT&E assessment determined that CIS offers a significant improvement over the paper-based procedures and it successfully performs, in the military health care environment, the functions it was designed to do in civilian hospitals. However, the DOT&E and OPTEC evaluations raised some questions that caused the PM to reassess Y2K compliance. The system was subsequently validated as Y2K compliant.

The second application to undergo OT&E was the Preventive Health Care Application (PHCA), which is used to document patient history, track immunizations, and recommend appropriate preventive care. OT was conducted on PHCA in September and October 1998, at Beaufort Naval Hospital, SC, and at two MTFs in San Antonio, TX. Many of the initial test results were unsatisfactory, mostly due to improper system installation and workstation configurations. Following IOT&E, the PHCA Project Manager corrected the problems and FOT&E confirmed that everything was favorably resolved. OPTEC then concluded the system to be operationally effective, suitable, and survivable. DOT&E performed an independent assessment that agreed with the OPTEC assessment, while noting that testing could have been strengthened by additional user surveys and response time measurements.

TEST & EVALUATION ACTIVITY

In April and May 1999, OPTEC conducted an OA on CHCS II Increment 1, a prototype system that was installed in three clinics on the Hawaiian Island of Oahu. (Increment 1 will not be installed outside of the Hawaiian clinics. CHCS II Increment 2 is the integrated IOC system slated for worldwide deployment.) Initial results indicated that the prototype system is neither operationally effective nor suitable, and has not been accepted by the users—most of whom ceased to use it after the OA was complete.

An updated CHCS II TEMP was submitted to OSD for approval in December 1998. However, FY99 funding has been unsettling, and by the time the TEMP reached DOT&E, CHCS II had undergone substantial architectural changes (both operational and technical) that invalidated much of the test planning. The TEMP was returned to the PM, and work began anew to develop a TEMP that would support the IOT&E of CHCS II Increment 2, the integrated IOC system.

TEST & EVALUATION ASSESSMENT

CHCS II is very complex, and planning for IOT&E of the integrated system has been problematic. The PM has effectively implemented the Integrated Product and Process Development initiative, but with so many migration and legacy systems (each with its own product manager), and with such large Integrated Product Teams (IPTs), the process is often cumbersome. DOT&E actively participates in these IPTs to provide responsive OT&E guidance and streamline their activities. However, the funding fluctuations and constant architectural changes have made it difficult to establish a baseline for planning.

Since it will be DoD's premier health care system, CHCS II will have a tremendous operational impact on the fighting force. The CPR will be the first (military or civilian) cradle-to-grave automated health care record, one that can revolutionize the effectiveness of the MHS by providing instantaneous patient information to health care providers worldwide. An associated "smart card" called the Personal Information Carrier will enable the warfighters to carry some of this information with them, thus enhancing combat effectiveness by expediting health care at all levels.

CHCS II faces many serious challenges. Technically, it is on the leading edge of technology and must link multiple commercial-off-the-shelf products together, both within and among nearly 170 MTFs worldwide, in a way that is not being done or even necessary in the civilian sector. Operationally, it means a new way of doing business for many health care providers required to become more and more "computer literate," which can be more time-consuming at first and thus meets resistance from some. CHCS II also introduces some new procedures, such as forcing health care providers to use templates to record diagnoses in an effort to standardize the CPR. (This new procedure is one of the reasons why many users in Hawaii rejected the prototype Increment 1).

During FY00, DOT&E will continue to actively support the IPT process and directly assist in developing the TEMP and detailed OT&E plan so that IOT&E can take place as soon as practicable. Once the test results are in and DOT&E has completed its independent assessment, recommendations will follow which should aid the PM in fielding the best possible system to support MHS.

